1. GENERAL

1.01. THE STRUCTURE IS DESIGNED IN ACCORDANCE AND MEETS THE DESIGN CRITERIA OF THE FOLLOWING CODES:
- 2012 NORTH CAROLINA BUILDING CODE
- ASCE 7-05, MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES
- ACI 318-05, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
- ACI 530-05, BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES
- AISC 360, SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS
- NDS-05, NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION
- ADM 1-00, ALUMINUM DESIGN MANUAL

1.02. METHODS, PROCEDURES, AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.

1.03. THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL DETERMINE THE SCOPE OF THE STRUCTURAL WORK FROM THE CONTRACT DOCUMENTS TAKEN AS A WHOLE. THE STRUCTURAL DRAWINGS SHALL NOT BE CONSIDERED SEPARATELY FOR PURPOSES OF BIDDING THE STRUCTURAL WORK. DUE CONSIDERATION SHALL BE GIVEN TO OTHER STRUCTURAL WORK OR WORK RELATED TO THE STRUCTURE, INCLUDING NECESSARY COORDINATION DESCRIBED OR IMPLIED BY THE ARCHITECTURAL AND MECHANICAL DRAWINGS.

1.04. SCALES NOTED ON THE DRAWINGS ARE FOR GENERAL REFERENCE ONLY. NO DIMENSIONAL INFORMATION SHALL BE OBTAINED BY DIRECT SCALING OF THE DRAWINGS.

1.05. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ALL RESULTING REVISIONS TO THE STRUCTURAL SYSTEM OR OTHER TRADES AS A RESULT OF ACCEPTANCE OF CONTRACTOR PROPOSED ALTERNATIVES OR SUBSTITUTIONS.

1.06. PRINCIPAL OPENINGS IN THE STRUCTURE ARE INDICATED ON THE CONTRACT DOCUMENTS. REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR SLEEVES, CURBS, INSERTS, ETC. NOT HEREIN INDICATED. OPENINGS LESS THAN 12 INCHES IN DIMENSION ARE GENERALLY NOT SHOWN. THE LOCATION OF SLEEVES OR OPENINGS IN STRUCTURAL MEMBERS SHALL BE SUBMITTED TO COLLINS STRUCTURAL CONSULTING, PLLC. FOR REVIEW.

1.07. GENERAL CONTRACTOR IS TO VERIFY AND COORDINATE ALL DIMENSIONS AND DETAILS AS SHOWN ON THE DRAWINGS AND FROM EQUIPMENT SUPPLIERS/INSTALLERS PRIOR TO CONSTRUCTION. WHEN DISCREPANCIES OR QUESTIONS ARISE, COLLINS STRUCTURAL CONSULTING, PLLC. SHALL BE NOTIFIED.

1.08. ELEVATIONS (XXX'-X") SHOWN ON PLANS ARE TO TOP OF STEEL, CONCRETE, OR PLYWOOD SHEATHING, U.N.

1.09. COLLINS STRUCTURAL CONSULTING, PLLC. IS RESPONSIBLE FOR THE STRUCTURAL DESIGN OF THE FOUNDATION ONLY. THE PRECAST MANUFACTURER SHALL BE RESPONSIBLE FOR THE STRUCTURAL DESIGN OF THE SUPERSTRUCTURE. THE DESIGN OF THE SUPERSTRUCTURE SHALL BE IN COMPLIANCE WITH THE GOVERNING CODES AND THE OUTLINE SPECIFICATIONS GIVEN IN THESE NOTES. FOR PERMITTING OF THE SUPERSTRUCTURE, THE PRECAST MANUFACTURER SHALL SUBMIT TO THE BUILDING OFFICIAL ALL ERECTION AND FABRICATION SHOP DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA WHO IS RESPONSIBLE FOR THE DESIGN PERFORMANCE OF THE SUPERSTRUCTURE.

2. DESIGN LOADS

2.01. DESIGN GRAVITY LOADS ARE AS FOLLOWS:
SUPERIMPOSED AREA DEAD LOAD (included but not limited to the following):
- MECHANICAL AND CEILING. . . . . .5 PSF
- ROOF STRUCTURE AND SHEATHING. . . . . .4 PSF
- METAL ROOFING . . . . .6 PSF

AREA LIVE LOADS
- ROOF. . . . . 20 PSF
- MOVABLE PARTITIONS. . . . . 20 PSF
- DINING/KITCHEN. . . . . .100 PSF

CONCENTRATED LIVE LOADS
- ROOF. . . . . .300 LBS
- LOBBY AND ASSEMBLY AREAS. . . . . 2000 LBS

2.02. ROOF SNOW LOAD
- GROUND SNOW LOAD. . . . . 15 PSF
- FLAT-ROOF SNOW LOAD Pf. . . . . .8.3 PSF
- SNOW EXPOSURE FACTOR Ce 1.0
- SNOW LOAD IMPORTANCE FACTOR Is. 1.0
- THERMAL FACTOR Ct 1.0

2.03. WIND LOAD
- BASIC WIND SPEED (BUILDING FRAME - 3 SEC GUST). . . . . 92 MPH
- WIND IMPORTANCE FACTOR (I). 1.0
- BUILDING CATEGORY . . . . ENCLOSED
- WIND EXPOSURE CATEGORY. C
- INTERNAL PRESSURE COEFFICIENT . . . .+0.18/-0.18
- COMPONENTS AND CLADDING WIND LOAD . . . . .PER TABLE

2.04. SEISMIC DESIGN DATA
- SEISMIC IMPORTANCE FACTOR IE. 1.0
- OCCUPANCY CATEGORY. II
- MAPPED SPECTRAL RESPONSE ACCELERATION Ss. . . . . 0.219 G
- MAPPED SPECTRAL RESPONSE ACCELERATION S1. . . . . 0.084 G
- SITE CLASS. . . . . .D
- SPECTRAL RESPONSE COEFFICIENT Sds . . . . 0.234 G
- SPECTRAL RESPONSE COEFFICIENT Sd1 . . . . 0.134 G
- SEISMIC DESIGN CATEGORY C
- BASIC SEISMIC-FORCE RESISTING SYSTEM. . . . .
- DESIGN BASE SHEAR . . . . 9.0 KIPS
- SEISMIC RESPONSE COEFFICIENT Cs . . . . .0.078 G
- RESPONSE MODIFICATION FACTOR R. 3.0
- ANALYSIS PROCEDURE. . . . . EQUIVALENT LATERAL FORCE PROCEDURE

2.05. STRUCTURAL MEMBERS HAVE BEEN LOCATED AND DESIGNED TO ACCOMMODATE THE PROJECT EQUIPMENT AND OPENINGS SPECIFIED BY THE PROJECT CONSULTANT. ANY SUBSTITUTIONS RESULTING IN REVISIONS TO THE STRUCTURE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH COLLINS STRUCTURAL CONSULTING, PLLC.

2.06. LIVE LOADS ARE REDUCED FOR ELEMENTS BASE ON THE K(LL) FACTORS, IN COMPLIANCE WITH THE STRUCTURAL DISGN SECTION OF THE BUILDING CODE.

3. MATERIAL STRENGTHS

3.01. CONCRETE (f'c @ 28 DAYS)
- ALL CONCRETE U.N. . . . . .3,000 PSI
- FOOTINGS. . . . . .3,000 PSI
- SLAB ON GRADE . . . . .3,000 PSI

3.02. REINFORCING STEEL (Fy)
- REBAR (ASTM A615) . . . . 60,000 PSI
- PLAIN STEEL WELDED WIRE REINFORCING (ASTM 185). . . . . . 65,000 PSI
- DEFORMED STEEL WELDED WIRE REINFORCING (ASTM A497). . . . 65,000 PSI

3.03. WOOD FRAMING (2001 NDS)
STUDS
S-P-F SOUTH - STUD GRADE, 2" THICK, 2" AND WIDER
- Fb (SINGLE MEMBER USE) . . . .
- Ft . . . . .275 PSI
- Fv . . . . .135 PSI
- Fc (PERP). . . . . .335 PSI
- Fc . . . . .625 PSI
- E. . . . . .1,000,000 PSI

BEAMS, JOISTS AND STRINGERS
S-P-F SOUTH - NO. 2 GRADE, 2" THICK, 2" AND WIDER
- Fb (SINGLE MEMBER USE) . . . . .775 PSI
- Ft . . . . .350 PSI
- Fv . . . . .135 PSI
- Fc (PERP). . . . . .335 PSI
- Fc . . . . .1,000 PSI
- E. . . . . .1,100,000 PSI
- APPEARANCE GRADE. . . . . .ARCHITECTURAL
- SHEATHING . . . . .STRUCTURAL II EXT

3.04. SOIL/SUBGRADE PROPRETIES ("SOIL TYPE")
- ALLOWABLE SOIL BEARING PRESSURE . . . . 2000 PSF
- SUBGRADE MODULUS (k). . . . . .100 PCI
- ULTIMATE FRICTION COEFFICIENT BETWEEN CONCRETE FOUNDATION AND SOIL0.35
- UNIT WEIGHT OF SOIL . . . . .115 PCF
- ACTIVE LATERAL EARTH PRESSURE, Ka . . . . .50 PSF/FT
- PASSIVE LATERAL EARTH PRESSURE, Kp. . . . . 270 PSF/FT
- MINIMUM INTERAL ANGLE OF FRICTION . . . . 28 °

4. SUBMITTAL

4.01. SUBMITTALS AND SHOP DRAWINGS SHALL BE SUBMITTED TO COLLINS STRUCTURAL CONSULTING, PLLC FOR REVIEW PRIOR TO ANY CONSTRUCTION BEGINS.

4.02. BIM 3D DRAFTING AND/OR DESIGN MODELS MAY BE AVAILABLE FOR REFERENCE USE IN THE SUBMITTAL PROCESS. CONTACT COLLINS STRUCTURAL CONSULTING, PLLC. FOR MODEL(S) IF AVAILABLE.

4.03. COLLINS STRUCTURAL CONSULTING, PLLC. SHALL HAVE 15 DAYS AFTER THE DATE OF RECEIPT OF THE SUBMITTAL FOR REVIEWING AND COMMENTING ON ANY SUBMITTALS.

4.04. THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL REVIEW SUBMITTAL PRIOR TO SUBMITTING THEM TO COLLINS STRUCTURAL CONSTULTING, PLLC. HIGHLIGHT, CLOUD, OR OTHERWISE INDICATE ITEMS THAT DEVIATE FROM THE CONTRACT DOCUMENTS ON THE SUBMITTAL.

4.05. PROVIDED PRODUCTS AND SYSTEMS COMPLYING WITH SPECIFIC PERFORMANCE AND DESIGN CRITERIA AS INDICATED ON CONTRACT DOCUMENTS, WHERE PROFESSIONAL DESIGN SERVICES OR CERTIFICATIONS BY A DESIGN PROFESSIONAL ARE REQUIRED BY THE CONTRACT DOCUMENTS.

4.06. CONSTRUCTION ADMINISTRATION SERVICES ARE INCLUDED IN THE SCOPE OF SERVICES PROVIDED BY COLLINS STRUCTURAL CONSULTING, PLLC. THE FOLLOWING SUBMITTALS ARE RECOMMENED FOR THIS PROJECT:
A.CAST-IN-PLACE CONCRETE:
DESIGN MIX (FOR EACH PROPOSED CONCRETE MIXTURE)
REINFORCEMENT SHOP DRAWINGS: LAYOUT, PIECES, AND BENDS
FORMWORK, SHORING AND RESHORING SUBMITTAL: DESIGN, ERECTION AND REMOVAL
ALL SUBMITTALS COMPLY WITH ACI 301

5. FOUNDATION AND SLAB ON GRADE

5.01. THE SUBSURFACE INFORMATION AND FOUNDATION DESIGN ARE BASED ON THE FOUNDATION SECTION OF THE BUILDING CODE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE FOUNDATION IS ASSUME TO BE BEARING ON A SUBGRADE OF STIFF CLAY. THE SUBGRADE SHALL HAVE SOIL PROPERTIES LISTED IN THE MATERIAL STRENGTHS SECTIONS.

5.02. CENTER COLUMN FOOTINGS ON COLUMN CENTERLINES UNLESS NOTED OTHERWISE.

5.03. WALL FOOTINGS ARE CENTERED ON FOUNDATION WALL UNLESS NOTED OTHERWISE.

5.04. COLUMN AND WALL FOOTINGS SHALL BEAR ON ORIGINAL, UNDISTURBED SOIL OR COMPACTED FILL AS DEFINED IN SOIL REPORT, BUT NOT HIGHER THAN THE MINIMUM DEPTH SHOWN ON DRAWINGS.

5.05. ALL STRUCTURAL STEEL BELOW SLAB ON GRADE SHALL HAVE A MINIMUM OF 3 INCHES CONCRETE PROTECTION ALL AROUND.

5.06. ALL FOOTING TOP REINFORCEMENT SHALL BE ADEQUATELY SUPPORTED BY STEEL SUPPORTS FROM GRADE BELOW.

5.07. CONTRACTOR TO KEEP EXCAVATIONS DRY AND PROTECTED FROM FROST AT ALL TIMES DURING THE FOUNDATION CONSTRUCTION.

5.08. FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION, WHICH DIFFER FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT OR ASSUME VALUES SHALL BE REPORTED TO THE ARCHITECT, GEOTECHNICAL ENGINEER AND COLLINS STRUCTURAL CONSULTING, PLLC., BEFORE FURTHER CONSTRUCTION IS ATTEMPTED.

5.09. PLACEMENT OF BACKFILL IS NOT ALLOWED UNTIL (THE SLAB ON GRADE IS IN PLACE AND) THE MAIN FLOOR DIAPHRAGM IS COMPLETED.

5.10. SLAB ON GRADE SHALL BE UNDERLAIN BY A MINIMUM OF 2 INCHES OF SAND. PRIOR TO PLACING THE SAND, THE FLOOR SUBGRADE SHALL BE PROPERLY COMPACTED AND PROOFROLLED AND SHALL BE FREE OF STANDING WATER, MUD AND FROZEN SOIL. BEFORE PLACEMENT OF THE CONCRETE, A VAPOR BARRIER SHALL BE PLACED ON TOP OF THE GRANULAR MATERIAL.

5.11. SLABS ON GRADE SHALL HAVE CONSTRUCTION JOINTS OR CRACK CONTROL JOINTS AT EACH COLUMN LINE IN EACH DIRECTION. ADDITIONAL CRACK CONTROL JOINTS SHALL BE PROVIDED, SUCH THAT NO AREA BOUNDED BY CONSTRUCTION AND/OR CRACK CONTROL JOINTS CONTAINS MORE THAN 450 SQUARE FEET OF SLAB AREA, THE SPACING OF THE JOINTS DOES NOT EXCEED 36 TIMES THE SLAB THICKNESS, AND THE RESULTING ASPECT RATIO OF THE DIMENSIONS OF SLAB AREA DOES NOT EXCEED 1.5 TO 1. CRACK CONTROL JOINTS SHALL BE MADE USING A "SOFT-CUT" CONCRETE SAW AS SOON AS THE SLAB WILL SUPPORT THE WEIGHT OF THE SAW AND OPERATOR WITHOUT DISTRUBING THE FINAL FINISH. THE CRACK CONTROL JOINTS SHALL BE CUT A MAXIMUM WIDTH OF 1/8 INCH AND A MINIMUM DEPTH OF 1/3 THE SLAB THICKNESS. REFER TO THE DRAWINGS FOR INFORMATION ON CONTROL JOINTS, CONSTRUCTION JOINTS, REINFORCEMENT DETAILS AND JOINT SEALANT DETAILS.

5.12. WHERE THE SLAB IS TO RECEIVE SENSITIVE ARCHITECTURAL FLOOR FINISHES, ALL JOISTS IN THE SLAB CONSTRUCTION SHALL BE PLACED TO ALIGN WITH JOINTS IN THE FLOOR FINISHES.

6. TIMBER FRAMING MEMBERS

6.01. PLYWOOD FOR ROOF SHALL BE 3/4" THICK AND SHALL CONFORM TO APA PS 1 RATED SHEATHING 48/24, EXTERIOR, 48" X 96". PLYWOOD SHALL BE TWO SPAN (MINIMUM) CONTINUOUS. FACE GRAIN SHALL BE PERPENDICULAR TO SUPPORTS WITH A STAGGERED LAY-UP. PROVIDE TWO PANEL EDGE CLIPS BETWEEN SUPPORTS. NAIL PLYWOOD TO SUPPORTING MEMBERS WITH 8D NAILS AT 6" O.C. AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS. MINIMUM MODULUS OF ELASTICITY SHALL BE 1800000 PSI.

6.02. WOOD TRUSSES SHALL BE DESIGNED TO CONFORM TO NATIONAL FOREST PRODUCTS ASSOCIATION "NATIONAL DESIGN SPECIFICATION FOR STRESS GRADE LUMBER AND ITS FASTENINGS" AND THE TRUSS PLATE INSTITUTE "DESIGN SPECIFICATIONS FOR LIGHT METAL PLATE CONNECTED WOOD TRUSSES". THE DESIGN CALCULATIONS AND DRAWINGS SHALL BEAR THE SEAL OF THE RESPONSIBLE REGISTERED PROFESSIONAL ENGINEER. ALL CHORDS MUST BE CUT FROM LUMBER BEARING THE PROPER GRADE MARK FOR THE MATERIAL SPECIFIED. CHORD LUMBER SHALL HAVE A COEFFICIENT OF VARIATION FOR THE MODULUS OF ELASTICITY OF 0.11 OR LESS. DESIGN DRAWINGS SHALL BE SUBMITTED FOR ALL TRUSSES INDICATING THE SPECIES, SIZES, AND STRESS GRADES OF LUMBER AND CONNECTOR PLATE SIZES TO BE USED IN THE FABRICATION OF THE TRUSSES. BEARING, ANCHORAGE AND BRACING DETAILS SHALL BE SHOWN. CONNECTOR PLATES SHALL BE MANUFACTURED FROM MATERIAL CONFORMING TO ASTM A446, GRADE A, AND SHALL GALVANIZED IN ACCORDANCE WITH ASTM A525, COATING DESIGNATION G60. IN HIGHLY CORROSIVE ENVIRONMENTS OR WHERE FIRE RETARDANT LUMBER IS SPECIFIED, STAINLESS STEEL CONNECTOR PLATES SHALL BE USED.

7. WOOD TRUSSES

7.01. THE TRUSS ENGINEER SHALL DESIGN THE TRUSSES AND GIRDER TRUSSES FOR THE LOADS INDICATED ON THE STRUCTURAL DRAWINGS. SPECIAL LOAD CONSIDERATIONS, SUCH AS MECHANICAL UNITS, OVERFRAMING, ETC. SHALL BE ACCOUNTED FOR IN THE DESIGN. TRUSS TYPES SHOWN ARE FOR GENERAL ORIENTATION ONLY. SOME TRUSS TYPES MAY OCCUR THAT ARE NOT SHOWN IN THESE DRAWINGS. THE TRUSS ENGINEER IS RESPONSIBLE FOR ENSURING THAT TRUSS SHAPES AND DIMENSIONS MATCH ARCHITECTURAL ROOF PLAN AND DETAILS.

7.02. THE TRUSS ENGINEER SHALL ACCEPT FULL RESPONSIBILITY FOR THE DESIGN. THE TRUSS ENGINEER SHALL PREPARE DESIGN CALCULATIONS AND DRAWINGS WHICH SHALL BE SEALED, SIGNED, AND DATED BY THE RESPONSIBLE STRUCTURAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED.

7.03. THE DESIGN SHALL INCLUDE INTERNAL CONNECTIONS AND CONNECTIONS BETWEEN TRUSSES AND OTHER STRUCTURAL MEMBERS AND ARCHITECTURAL SYSTEMS. TYPICAL DETAILS OF CONNECTIONS SHALL BE SHOWN.

7.04. THE MEMBER SIZE AND PROPERTIES FOR EACH MEMBER USED SHALL BE SHOWN, CLEARLY INDICATING WHERE EACH MEMBER IS BEING USED.

7.05. PARTICULAR ATTENTION SHALL BE GIVEN TO HEEL HEIGHTS AND TOP CHORD SLOPES TO ENSURE THAT THE FASCIA DETAILS ARE CONSISTENT, ALIGNED, AND IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS. DETAILS HEREIN ARE BASED UPON THE USE OF 2X4 DIMENSIONAL LUMBER TOP AND BOTTOM CHORD MEMBERS. IF CHORD DEPTHS VARY FROM 2X4 DIMENSIONAL LUMBER TRUSS CONFIGURATION SHALL BE ADJUSTED AS REQUIRED.

7.06. A SAMPLE SUBMITTAL OF THE TYPICAL TRUSS TYPES SHALL BE SUBMITTED FOR PRELIMINARY REVIEW PRIOR TO COMPLETION OF DESIGN CALCULATIONS AND DRAWINGS.

7.07. COMPLETE ERECTION PLANS AND DETAILS SHALL BE SUBMITTED TO EACH TRADE FOR REVIEW.

7.08. THE TRUSS ENGINEER SHALL BE RESPONSIBLE FOR ANY FIELD COORDINATION ISSUES WHICH MAY ARISE REGARDING THE TRUSSES, GIRDER TRUSSES, OPENINGS IN TRUSSES, AND CONNECTIONS OF TRUSSES.

7.09. REFER TO THE STRUCTURAL NOTES FOR WOOD FRAMING NOTES.

7.10. TRUSS ENGINEER SHALL VERIFY THAT DETAILS OF CONNECTIONS SHOWN ARE APPROPRIATE FOR THE TRUSS DESIGN. IF NOT, PROPOSED REVISIONS TO DETAILS SHALL BE SUBMITTED.

7.11. THE MAXIMUM SPACING OF THE TRUSSES SHALL BE 24 INCHES ON CENTER (VERIFY SPACING WITH PLANS AND DETAILS). THE SELECTED SPACING SHALL BE CORRDINATED WITH THE TRUSS ENGINEER, MECHANICAL ENGINEER, FABRICATOR, DECKING SUBCONTRACTOR, HVAC SUBCONTRACTOR, ELECTRICAL SUBCONTRACTOR, ERECTORS, DRYWALLER, AND ANY OTHER RELATED SUBCONTRACTORS. THE SPACING SHALL BE DENOTED IN SHOP DRAWINGS FOR EACH TRADE.

7.12. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING:
ALLOWABLE LOADS IN LBS/EFFECTIVE NAIL OR LBS/SQUARE INCH FOR LUMBER AND PLATES USED AS ALLOWED BY ICBO AND CURRENT ICBO REPORT NUMBER AND BY SOUTHERN BUILDING CODE CONGRESS INTERNATIONAL.
STRESS REDUCTION FACTORS USED FOR PLATES.
TOP AND BOTTOM CHORD DESIGN LOADS IN PLF.
SIZE, GAUGE, AND EXACT LOCATION BY DIMENSION OF PLATES.
LUMBER SPECIES AND GRADES USED.
STAMP AND SIGNATURE OF ENGINEER RESPONSIBLE FOR PREPARATION OF ALL TRUSS DESIGN AND LAYOUT DRAWING.
NAME AND TRADEMARK OF PLATE MANUFACTURER AND TRUSS FABRICATOR AND PROJECT NAME AND LOCATION.
CALCULATIONS AND DOCUMENTATION OF CONCENTRATED LOAD REQUIREMENTS.
TRUSS BLOCKING REQUIREMENTS.
INSTALLING SECURING, BRACING, ETC. OF ALL TRUSSES.

7.13. METAL GUSSET PLATES:
PLATE DESIGN AND MANUFACTURE SHALL BE AS APPROVED BY "THE RESEARCH COMMITTEE FOR THE ICBO". PLATES SHALL BE GALVANIZED OR OTHERWISE PROTECTED FROM CORROSION.
MANUFACTURER'S NAME OR TRADEMARK SHALL BE VISIBLE ON PLATES.

7.14. FABRICATION
FABRICATION OF TRUSSES SHALL BE AS APPROVED BY ICBO EXCEPT THAT THIS SPECIFICATION SHALL GOVERN WHEN IT EXCEEDS ICBO REQUIREMENTS.
TRUSSES SHALL BE FABRICATED FROM APPROVED SHOP DRAWINGS.
TRUSSES SHALL BE FABRICATED IN JIGS WITH MEMBERS ACCURATELY CUT TO PROVIDE FULL CONTACT AT JOINTS.
EACH CHORD SECTION SHALL EXTEND THROUGH TWO PANEL POINTS BEFORE BEING SPLICED.
TRUSS FABRICATOR SHALL HAVE HIS PLANT INSPECTED FOUR TIMES PER YEAR BY AN INDEPENDENT TESTING LABORATORY IN ACCORDANCE WITH TPI REGULATIONS AND COPIES OF INSPECTIONS MADE AVAILABLE TO OWNER UPON REQUEST.

8. WOOD CONSTRUCTION CONNECTOR

8.01. ALL WOOD CONSTRUCTION CONNECTORS SHOWN SHALL BE SIMPSON STRONG-TIE CONNECTORS MANUFACTURED BY SIMPSON STRONG-TIE COMPANY, INC. (OR APPROVED EQUIVALENT). BEFORE SUBSTITUTING ANOTHER BRAND, CONFIRM LOAD CAPACITY BASED ON RELIABLE PUBLISHED TESTING DATA OR CALCULATIONS AND SUBMIT TO COLLINS STRUCTURAL CONSULTING, PLLC FOR EVALUATION AND WRITTEN APPROVAL FOR SUBSTITUTION PRIOR TO INSTALLATION.

8.02. ALL SPECIFIED FASTENERS SHALL BE INSTALLED ACCORDING TO THE DETAILS AND THE MANUFACTURER'S INSTRUCTIONS. ALL HOLES IN CONNECTORS SHALL BE PROPERLY NAILED TO THE WOOD STRUCTURE. CONTACT COLLINS STRUCTURAL CONSULTING, PLLC FOR FASTENERS NOT SHOWN. INCORRECT FASTENER QUANTITY, SIZE, TYPE, MATERIAL, OR FINISH MAY CAUSE THE CONNECTION TO FAIL. 16D FASTENERS ARE COMMON NAILS (8 GA. X 3 1/2") AND CANNOT BE REPLACED WITH 16D SINKERS (9GA. X 3 1/4") UNLESS OTHERWISE SPECIFIED.

8.03. BOLT HOLES SHALL BE A MINIMUM OF 1/32" AND A MAXIMUM OF 1/16" LARGER THAT THE BOLT DIAMETER (PER THE NDS, SECTION 8.1.2.1).

8.04. INSTALL ALL SPECIFIED FASTENERS BEFORE LOADING THE CONNECTION.

8.05. USE PROPER SAFETY EQUIPMENT.

8.06. WELDING GALVANIZED STEEL MAY PRODUCE HARMFUL FUMES; FOLLOW PROPER WELDING PROCEDURES AND SAFETY PRECAUTIONS. WELDING SHOULD BE IN ACCORDANCE WITH AWS STANDARDS.

8.07. PNEUMATIC OR POWDER-ACTUATED FASTENERS MAY DEFLECT AND INJURE THE OPERATOR OR OTHERS. NAIL GUNS MAY BE USED TO INSTALL CONNECTORS, PROVIDED THE CORRECT QUANTITY AND TYPE OF NAILS ARE PROPERLY INSTALLED IN THE NAIL HOLES. GUNS WITH NAIL HOLE-LOCATING MECHANISMS SHOULD BE USED. FOLLOW THE MANUFACTURER'S INSTRUCTIONS AND USE THE APPROPRIATE SAFETY EQUIPMENT.

8.08. JOISTS SHALL BEAR COMPLETELY ON THE CONNECTOR SEAT, AND THE GAP BETWEEN THE JOIST END AND THE HEADER SHALL NOT EXCEED 1/8" PER ASTM TEST STANDARDS.

8.09. FOR HOLDDOWNS, ANCHOR BOLT NUTS SHALL BE FINGER-TIGHT PLUS 1/3 TO 1/2 TURN WITH A WRENCH, WITH CONSIDERATION GIVEN TO POSSIBLE FUTURE WOOD SHRINKAGE. CARE SHOULD BE TAKEN TO NOT OVER-TORQUE THE NUT.

8.10. UNLESS OTHERWISE NOTED, BOLTS AND NAILS SHALL NOT BE COMBINED. 8D, 10D, AND 16D SPECIFY COMMON NAILS.

8.11. BOLTS SHALL BE ASTM A307, GRADE A OR BETTER.

8.12. UNLESS OTHERWISE NOTED, BENDING STEEL IN THE FIELD MAY CAUSE FRACTURES AT THE BEND LINE. FRACTURED STEEL WILL NOT CARRY LOAD AND MUST BE REPLACED.

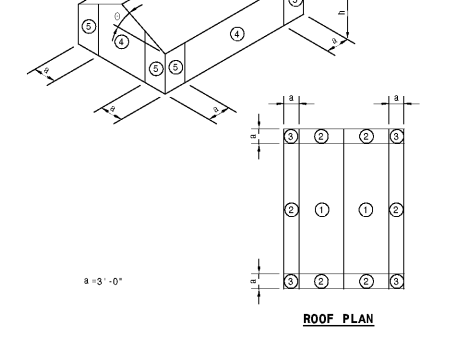
8.13. A FASTENER THAT SPLITS THE WOOD WILL NOT SUPPORT THE DESIGN LOAD. IF THE WOOD HAS A TENDENCY TO SPLIT, PRE-BORE HOLES TO 3/4 OF THE NAIL DIAMETER (1997 NATIONAL DESIGN SPECIFICATION, 2.1.3.1).

WOOD FRAMING MINIMUM CONNECTION SCHEDULE

CONNECTION NAILING	HAND NAILING OPTION	GUN NAILING OPTION
1. JOIST TO SILL/GIRDER (TOE NAIL)	(3) 8D com	(3) 3"x0.131"Ø
2. BRIDGING TO JOIST (TOENAIL EACH END)	(2) 8D com	(2) 3"x0.131"Ø
3. SOLE PLATE TO JOIST/BLOCKING (TYPICAL)(FACE NAIL)	16D com @ 16"OC	3"x0.131"Ø @ 8"OC
SOLE PLATE TO JOIST/BLOCKING (SHEARWALL)(FACE NAIL)	(3) 16D com @ 16"OC	(4) 3"x0.131"Ø @ 16"OC
4. TOP PLATE TO STUD (END NAIL)	(2) 16D com	(3) 3"x0.131"Ø
5. STUD TO SOLE PLATE	(4) 8D com TN OR (2) 16D com EN	(4) 3"x0.131"Ø TN OR (3) 3"x0.131"Ø EN
6. DOUBLE STUDS (FACE NAIL)	16D com @ 12"OC	3"x0.120"Ø @ 8"OC
7. DOUBLE TOP PLATES (FACE NAIL)	16D com @ 16"OC	3"x0.131" @ 12"OC
8. TOP PLATES, LAPS & INTERSECTIONS (FACE NAIL)	(2) 16D com	(3) 3"x0.131"Ø
9. CONTINUOUS HEADER, TWO PIECES ALONG EACH EDGE	16D @ 16"OC W/ (2) 16D @ EE	3"x0.131" @ 8"OC W/ (3) 3"x0.131Ø @ EE
10. CEILING JOISTS TO PLATE (TOENAIL)	(3) 16D com	(5) 3"x0.131"
11. CONTINUOUS HEADER TO STUD (TOENAIL)	(4) 8D com	(4) 3"x0.131"
12. CEILING JOISTS, LAPS OVER WALLS (FACE NAIL)	(3) 16D com	(4) 3"x0.131"
13. CEILING JOISTS TO PARALLEL RAFTERS (FACE NAIL)	(3) 16D com	(4) 3"x0.131"
14. RAFTER TO PLATE (TOENAIL)	(3) 16D com	(4) 3"x0.131"
15. BUILT-UP CORNER STUDS	16D com @ 24"OC	3"x0.131" @ 16"OC
16. BUILT-UP GIRDER AND BEAMS	20D @ 32"OC @ TOP & BOT & STAGGERED (2) 20D @ ENDS & @ EACH SPLICE	3"x0.131"Ø @ 24"OC TOP & BOT & STAGGERED (3) 3"x0.131"Ø @ ENDS & @ EACH SPLICE
17. PLYWOOD AND PARTICLEBOARD (TO FRAMING):		
SUBFLOOR, ROOF SHEATHING 3/4" - 1 1/2" (UNBLOCKED)	8D com @ 6"OC	3"x0.131"Ø @ 6"OC
SUBFLOOR, ROOF SHEATHING 3/4" - 1 1/2" (BLOCKED)	8D com PER DTL, UNO	3"x0.131"Ø PER DTL, UNO
WALL SHEATHING (NOT SHEARWALLS) 3/4" OR SMALL (UNBLOCKED)	8D com @ 6"OC EDGE 8D com @ 12"OC IF	3"x0.131"Ø @ 6"OC EDGE 3"x0.131"Ø @ 12"OC IF
WALL SHEATHING (SHEARWALLS) 3/4" OR SMALL (BLOCKED)	8D com PER SCHD, UNO	3"x0.131"Ø PER SCHD, UNO

NOTES
1. NAIL REQUIREMENTS ARE BASE ON IBC SECTION 2304 AND ICC-ES REPORT ESR-1539. THE NAIL GUN OPTION IS BASED ON BOSTITCH NAILS WITH HEAD STYLE OF a) FULL ROUND, b) CLIPPED, c) OFFSET, OR d) NOTCHED. GENERAL CONTRACTOR MAY USE DIFFERENT MFR PROVIDED NAILS MEET ESR-1539.
2. REFER TO SECTION 2304 OF THE BUILDING CODE FOR ADDITIONAL MINIMUM CONNECTION REQUIREMENTS NOT LISTED.
3. "TN" DENOTES TOENAIL
4. "EN" DENOTES END NAIL
5. "com" DENOTES COMMON NAILS
6. "IF" DENOTES INTERMEDIATE FRAMING

1 — WOOD FRAMING MINIMUM CONNECTION SCHEDULE
12" = 1'-0"
D8001



ROOF PLAN

DESIGN LOAD (psf)		
ZONE	0-10 sq ft	>100 sq ft
1	+10.6, -16.9	+10.0, -15.3
2	+10.6, -29.4	+10.0, -21.6
3	+10.6, -43.5	+10.0, -34.1
ZONE	0-10 sq ft	>500 sq ft
4	+18.4, -20.0	+13.8, -15.3
5	+18.4, -24.7	+13.8, -15.3
4-PARAPET	NA	NA
5-PARAPET	NA	NA

NOTES:
1. (0-10 sq ft) EXAMPLE DENOTES EFFECTIVE WIND AREA.
2. + AND - SIGNS SIGNIFY PRESSURES ACTING TOWARD OR AWAY FROM THE SURFACES, RESPECTIVELY.
3. WIND PRESSURES MAY BE INTERPOLATED FOR EFFECTIVE WIND AREAS BETWEEN THE SPECIFIED RANGES.

2 — COMPONENTS & CLADDING WIND LOADS
NOT TO SCALE

CSC STRUCTURAL ABBREVIATIONS

@	AT
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AR	ANCHOR ROD
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS
B/	BOTTOM OF
BAL	BALANCE
BD	BOARD
BLK	BLOCK OR BLOCKING
BLDG	BUILDING
BM	BEAM
BOT	BOTTOM
B PL	BASE PLATE
BRDG	BRIDGING
BRG	BEARING
BRK	BRICK
BTWN	BETWEEN
BYND	BEYOND
CFMF	COLD FORMED METAL FRAMING
CG	CENTER OF GRAVITY
CIP	CAST IN PLACE
CJ	CONTRACTION OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPOSITE
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CTR	CENTER
DBA	DEFORMED BAR ANCHOR
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DIR	DIRECTION
DK	DECK
DL	DEAD LOAD
DN	DOWN
DO	DITTO
DP	DEEP
DS	DECK SPAN
DWG	DRAWING
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
EQ	EQUAL EMBED EMBEDDED
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FC	FACE
FD	FLOOR DRAIN
FDTN	FOUNDATION
FF	FAR FACE
FIN	FINISHED
FLR	FLOOR CONSTRUCTION
FRP	FIBRE-REINFORCED POLYMER
FS	FAR SIDE
FTG	FOOTING
FX	FOOTING DESIGNATION
GA	GAGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GL	GRID LINE
HEF	HORIZONTAL EACH FACE
HK	HOOK HORIZ HORIZONTAL
H PT	HIGH POINT
HS	HIGH STRENGTH
HSS	HOLLOW STRUCTURAL SHAPE
HWS	HEAD WELDED STUD
ID	INSIDE DIAMETER
IF	INSIDE FACE
INFO	INFORMATION
INTER	INTERMEDIATE
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIP=1000 LB
L	ANGLE
LB	POUND
LG	LONG
LL	LIVE LOAD
LLBB	LONG LEG BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
L PT	LOW POINT

LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LW	LIGHT WEIGHT
LWIC	LIGHT WEIGHT INSULATING CONCRETE
MAS	MASONRY
MATL	MATERIAL MAX MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MK	MARK
MO	MASONRY OPENING
MPH	MILE PER HOUR
MTL	METALNF NEAR FACE
NIC	NOT IN CONTRACT
NO	NUMBER
NS	NON SHRINK NS NEAR SIDE
NTS	NOT TO SCALE
NW	NORMAL WEIGHT
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OSHA	OCCUPATIONAL SAFETY AND HEALTH ASSOCIATION
PC	PIECE OR PORTLAND CEMENT
PCA	PORTLAND CEMENT ASSOCIATION
PCI	PRECAST/PRESTRESSED CONCRETE INSTITUTE
PCC	PRECAST CONCRETE
PDF	POWDER DRIVEN FASTENER
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PLYWD	PLYWOOD
PRCST	PRECAST
PROJ	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT
PX	PIER DESIGNATION
QTY	QUANTITY
R	RADIUS
RD	ROOF DRAIN
REF	REFERENCE
REINF	REINFORCED OR REINFORCING
REM	REMAINDER
REQD	REQUIRED
RET	RETURN
REV	REVISION
RO	ROUGH OPENING
SCHED	SCHEDULE
SECT	SECTION
SIM	SIMILAR
SHT	SHEET
SJ	SLIP JOINT
SJI	STEEL JOIST INSTITUTE
SLBB	SHORT LEG BACK TO BACK
SOG	SLAB ON GRADE
SPA	SPACES OR SPACING
SPEC	SPECIFICATION
SST	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STD	STANDARD STIFF STIFFENER
STIR	STIRRUP
STL	STEEL STRUCT STRUCTURAL
SYMM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THK	THICK
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOJ	TOP OF JOIST
TOS	TOP OF SLAB ON GRADE
TOW	TOP OF WALL
TYP	TYPICAL
UN	UNLESS NOTED
VAR	VARIES
VEF	VERTICAL EACH FACE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WAF	WELDED ANGLE FRAME
WCF	WELDED CHANNEL FRAME
WF	WIDE FLANGE
WLD	WELDED
WP	WORK POINT
WWF	WELDED WIRE FABRIC

CSC
Collins Structural Consulting, PLLC
P.O. Box 538 Creedmoor, NC 27522
(919) 253-6990 NCFirm PE No. P-0721

NORTH CAROLINA PROFESSIONAL SEAL 034003 ENGINEER SCOTT A. COLLINS
05/17/2018

ISSUED FOR CONSTRUCTION

SUGGS FARM PICNIC SHELTER
2401 GRIGSBY AVE
HOLLY SPRINGS, NC

structural revisions:

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STRUCTURAL NOTES

S00